The Bidding Game

The interative bidding game was first wed by Davis (1963, 1964) in Us study of the value of outdoor recreation in the Maine Woods. Davis elicited the values by asking his respondents whether or not they would be willing to pay an amount he specified to visit the area. Depending upon whether the respondent said yes or no to the initial amount, It was successively doubled or halved until the respondent switched his or her response from inclusion or exclusion (or vice versa) (Davis, 1964: 395). Randall, Ives and Eastman (1974) subsequently refined the technique and the bidding game, as they called it, has been used in a number of CV studies.[4]

According to Its proponents, the bidding game offers several important advantages over the open-ended question approach. Asking for yes/no responses to set amounts simplifies the respondent's task and make the valuation effort much more tractable than than asking him or her to immediately come up with a final dollar value. The form of the bidding game simulates the "respondent's typical market experience where he or she is confronted with specified goods at stated prices and must decide to buy or not to buy" (Brooksire, d'Arge and Schulze, 1979). The iteration procedure ensures that the total consumer's surplus is obtained. In this respect the procedure resembles an English ascending price auction where people bid up to their true WTP when faced with competition for a valued item. A final advantage, according to Hoehn and Randall (1983), is that the iterative technique significantly extends the time the respondents spends In valuing the good and therefore improves the quality of the response.

Potential for Bias

4. See Schulze , d'Arge and Brookshire (198 1) for a review of several of these a tudies .

The simplicity of the bidding game format, and therefore its ease of administration, rests on its yes/no format which, in turn, requires the use of an arbitrary starting point. Unfortunately, there is reason to believe that these characteristics and the iterative format may influence the respondent's values, especially when, as is often the case, the respondent is still in the process of considering the worth of the good to his or her household at the point the elicitation question is asked.

The yes/no format is vulnerable to "yea-saying" which occurs when respondents resolve their uncertainty by acquiescing (Couch and Keniston, 1960; Campbell, et al., 1967; Carr, 1977; Jackman, 1973; Roper 1984) instead of expending the effort necessary to arrive at a value. In order to avoid bias from yea-saying in attitude scales, survey researchers routinely mix the direction of the component questions so that some are worded positively and some negatively. As no comparable compensation procedure is available for CV surveys, this aspect of the bidding game method poses the threat of an upward bias caused by people agreeing with bids they would not otherwise accept.

The starting point provided by the interviewer's opening bid poses an even greater threat of bias as there is good reason to believe that some respondents will regard the starting bid as conveying information about the normatively acceptable value of the good,or about the actual value of the good, or some combination of the two. According to social influence theory, when "reality" (in our case the value of different levels of national. water quality) is ambiguous, people may seek social approval by adopting perceived group norms (e.g. the starting point) (Upmeyer, 1981). This accounts for the well known tendency of respondents in social surveys to give socially desirable answers (Edwards, 1957; Dohrenwend, 1966; Phillips and Clancey, 1970; 1972) in an apparent effort to win the interviewer's approval. Alternatively, instead of

conforming to perceived expectations, the respondent may regard the starting bid as conveying information about the real price of the good. Market researchers have found that price information is positively related to quality judgments about different products, especially when they are unfamiliar (Olsen, 1977; Monroe, 1977; Berkman and Gilson, 1978). Studies of choice behavior under uncertainty have shown that people use a variety of shorthand techniques or heuristics to simplify the choice process (Kahneman, Slovic and Tversky, 1982). One heuristic, "anchoring," occurs when people make estimates by starting from an initial value that is adjusted to yield the final answer. According to Kahnemsn, Slovic and Tversky (1973: 14), who have conducted experimental studies of anchoring, "different starting points yield different estimates, which are biased toward the Initial values." These considerations suggest that a "low" starting point may Indicate to a respondent that the good being valued has a lower utility than he or she initially believed while a "high" starting point might have the opposite effect.

Finally, the iterative procedure also poses the possibility of bias because it puts the respondent on the spot in a social situation. Some respondents may be reluctant to confess (to the interviewer) that they are unwilling to pay a given amount for a socially desirable good until the bidding process goes beyond their true WTP amount. According to Loehman (1981: 128), the Iterative process may also be vulnerable to Interviewer effects as some interviewers could be more aggressive in obtaining higher bids than others.

Tests for Starting Point Bias

Researchers using the bidding game technique recognized the possibility of starting point bias. Beginning with the Farmington study of air visibility in New Mexico (Blank et al., 1977; Rowe, d'Arge and Brookahire, 1980), they tested the effect of different starting points in a series of experiments. Although

the results of the earlier experiments are mixed, there is a growing preponderance of evidence that starting point bias is Indeed a serious problem in CV studies wing the iterative bidding game format.

The first study to test for starting point bias was also the first to report its presence. The Farmington study used three starting points -- $1, $5 and $10 -- and found that if the Interviewer suggested a bid of $1.00 higher, on the average individuals bid about $. 60 more (Rowe, d'Arge and Brookshire, 1980). Three more recent studies reach a similar conclwion. Thompson and Roberts (forthcoming) conducted a study of the economic value of sport diving around offshore platforms off Louisiana's coast which wed five starting points ranging from $20 to $400. Despite the low statistical power of their study (which mitigates against finding an effect unless it is very large) they conclude that starting point bias was present. Their mean bids increased monotonically from $107 for the $20 starting point to $257 for the $400 starting point. Boyle, Bishop and Walsh (forthcoming) also found starting bias in two contingent valuation studies of recreational values in Wisconsin. Their studies wed a particularly effective research design whereby a large number of' starting points were randomly assigned to respondents whose bids were then iterated in the standard fashion. In the case of both the Wisconsin River Study and the Sandhill Study, regression analysis showed strong starting point effects.

Of the five studies which report a negative test for starting point bias, two do not provide sufficient data to permit the evaluation of their claims (Randall, et al., 1978; Brookshire, Randall and Stoll, 1980), and the findings of two others are open to question. In the case of the South Coast Air Visibility Study, which wed starting points of $1, $10, and $50, the teats for starting point bias presented in the report are based on such small samples

that enormous differences would have been necessary to reject the null hypothesis that starting point has no effect. The fact that it was rejected in six of their 36 comparisons suggests that starting point bias may have played a greater role in this study than the researchers' realized. Our reanalysis of Greeley, Walsh and Young's (1981; 1982) study of water benefits in the South Platte River Basin (Mitchell and Carson, 1983; Carson, and Mitchell, forthcoming) shows that starting point bias (Implied by their payment vehicles) may be present in that study. Of the five, only Thayer's CV study of the environmental damages to recreators from possible geothermal development in a western park provides reasonably clearcut evidence for the absence of starting point bias.5

Desvousges, Smith and McGivney's (DMS) (1983) contingent valuation study of the recreational and related values of the Pennsylvania portion of the Monogahela River is the last test to be considered. They compared four different CV elicitation methods including two bidding games which differed only in using $25 and $125 starting points. According to the authors, there is "some evidence of a starting point bias in the bidding game, but the statistical analyses are not conclusive" (Desvousges, McGivney and Smith, 1983: p. 4-39). An examination of the distribution of WTP amounts given by their respondents for the first amount elicited In their study -- boatable quality water -- provides an instructive illustration of how starting points can influence respondent's behavior and why the effect is sometimes difficult to discern in statistical analysis. Table 1 presents these data which were kindly

5. Ye conjecture that one reason why his respondents were resistant to the effects of his $1 and $10 starting points may have been that his entrance fee payment vehicle implied an appropriate value. If this is the case, people had a "fair" entrance fee in mind when they gave their amounts, and this conception was resistant to the value Implied by the starting points.

Table 1 DISTRIBUTION OF WTP RESPONSES (EXCLUDING PROTEST ZEROS) FOR BOATABLE QUALITY WATER FOR THREE DIFFERENT ELICITATION PROCEDURES

	Unanchored Payment Card	Bidding Game $25 Starting Point	Bidding Game $125 Starting Point
0	■■■■■■■■■■■■■■■■	■■■■■■■■■■■	■■■■■■■■■■■■■■■■■■■■■■■■■
5	■■	■■■■■■	■■
10	■■■■■	■■	
15	■	■	■
20	■■■■■■■■■■■■	■	
25		■■■■■■■■■■■■■■■■■■	■■■
30	■	■■■■■■■	
35		■■■■■■	
40		■■	
45			■
50	■■■■■■■■■	■■■■■■■■	■■
55			■■■
60		■	
65			
70			
75	■■		■
80			
85			■
90			
95			■
100	■■■■■■■		■
105			
110			
115			
120			
125			■■■■■■■■■■■
130			
135			■
140			■
145			
150	■■		
151+	■■■■■	■	■■■■■■■

NUMBER OF OUTLIERS

Pay. Card	9
B.G. #25	0
B.G. #125	19

MEAN BIDS FOR USABLE RESPONSES

Pay. Card	$51
B.G. $25	29
B.G. $125	57

Source: Unpublished data from the Monongahela River Study (Desvousges, Smith and McGivney, 1983), supplied by William Desvousges, Research Triangle Institute.

provided to us by the authors. (It also gives the data for their unanchored payment card treatment which we will consider at a later point in this chapter.) Each asterisk indicates the amount given by a single. respondent. The base consists of all respondents except those who gave protest zeros. If their respondents were influenced by the starting points, we would expect a cluster of responses around each starting point for each treatment and the relative absence of amounts around the alternate (unasked) starting point. This is what occurs. When offered a $25 starting point, 18 respondents accept it as their WTP amount and about as many cluster in the vicinity of the amount. Only one person gave a bid higher than $100 in this treatment and no one gave a $125 bid. In contrast, twelve of thoae who received the $125 starting point bid that amount, and nine others gave higher amounts. Only a handful of respondents in this treatment gave bids in the $25 range.

Two factors appear to account for the statistical indeterminancy of DSM's teat for starting point bias. First, compared with the $25 treatment, twice as many people in the $125 subsample were defined as outliers , and dropped from the analysis before the starting point test was conducted because they gave bids which were too high relative to their incomes. It would appear likely that the higher starting point was responsible for some or all of this difference. A second factor which lowered the mean WTP amount for the $125 treatment, is the much larger number of usable zero bids given by that subsample. Although this result is counterintuitive, we believe it can be explained as an understandable reaction to what some respondents would regard as an unreasonably high starting point for a local environmental amenity. In his experimental work on auctions,Plott (1982) has observed a tendency for buyers to respond to what the respondent perceives as an absurdly high offer from the seller with an equally absurd low bid of around zero. If our

conjecture la correct, some of the zero bids in DSM's study were given by respondents who reacted to the $125 starting point by saying in effect, "That's ridiculous, it's not worth anything to me."

We have argued that the bidding game, for all its desirable properties, has several characteristics which result in biased WTP amounts. If it were possible to use the information from the distribution of bids given in response to an array of starting points to correct for starting point bias, at least one major drawback of the bidding game would be eased. Thayer (1981) has proposed a constructive test for starting point bias which he asserts can be used to adjust the observed bid to "accurately offset" the bias when it occurs (Thayer , 1981: 36). We examine the issue of correcting for starting point bias elsewhere (Carson, Casterline and Mitchell, 19841, where we show that Thayer's test has serious weaknesses under a variety of probable conditions. It does not appear that starting point bias can be overcome easily, if at all.

The Anchored Payment card

The alternative format we developed for this study is a card which contains a list of dollar amounts ranging from $0 to an amount much larger than any respondent would be likely to offer.[6] Some of the amounts on the card -- the anchors -- are identified as the average amounts which people in the respondent's income category are paying for several public goods. After an explanation of the anchors' meaning, the WTP amount is obtained by asking the respondents "which amount on this card or my amount in between in the most you are willing to pay (for the good). " Figure 1 shows one of the cards used in our 1981 pilot study.

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6. The payment card differs from the check-list procedure which has been used in several mail surveys (e.g. Hammack and Brown, 1974) in presenting individual amounts instead of ranges.

The payment card's format[7] la designed to improve the quality of our respondents .WTP amounts without biasing them. The menu of amounts la intended to encourage the respondents to give as much thought at possible to the valuation question by reminding them that there la a wide range of possible values, all of which are"acceptable ," and by requiring them to make a choice among numerous alternatives. It also aims to make the valuation task psychologically more manageable for those respondents who otherwise might be intimidated by an open ended WTP question. The anchors, by showing the respondents what they are currently paying for other public goods, underlines the fact-that they are already paying for water quality, an understanding which la vital to our scenario, and provides a context for interpreting the list of dollar amounts which they may find useful as they consider how much 'they are willing to pay for the water quality levels.

Although the payment card avoids starting point and yea-saying bias by aschewing the uae of starting points and questions with a yes/no format, it poses the risk of bias from other types of implied value cues and this risk must be taken into account in designing the cards for a given study. The primary areas of concern are range restriction/expansion bias from the range and intervals uaed on the cards and relational bias from the anchors.

Range Restriction/Expansion Bias

If the upper bound of the range la below some respondents' true WTP amounts, for example,they will undervalue the good unless, as is very unlikely, they insist on giving an amount which outside the card's range. Conversely, if the upper bound is too high ,[8] respondents **may** interpret the

7. In what follows, "payment card" refers to the anchored version unless otherwise indicated.

8. The lower bound should always be $0.

range as an indicator of value and overvalue the good. The choice of interval size la also important. Because experience shows that respondents rarely choose amounts which are not listed on the card except for favored numbers such as $25, $100 etc. it is possible to induce range restriction/expansion bias by using intervals which are too large in the part of the range where many people will be expected to give values; For example, if a number of respondents would value a particular good at 5,10, or 15 dollars, a card whose sequence skips from $0 to $25 runs the risk of distorting their values.

In the present study we employed several strategies to minimize the risk of these types of range-restriction bias. First, we used a different range for each of five income categories. For example , those with annual houaehold incomes below $10,000 received a card with a range of $0 to $480 whereas the payment card for the respondents in the highest income category ($50,000 *and* over) was $0 to $11,410. The anchor amounts varied according to the tax and spending rates of the respective groups. This procedure in effect normalized the range for the income categories;each was presented with a range which was meaningful for people in their 'circumstances and psychologically equivalent to the ranges given to the other groups. The basis for determining each category's upper limit was the amount we calculated it was paying in taxes for the national defense program. By identifying the upper limit in this way, we sought to anchor the range with a meaningful amount that moat people would recognize as very high.

Our second strategy was to vary the ranges between the amounts cn each income category's payment card, consistent with our other design objectives, in such a way that respondents ware offered as many amounts as possible in the their probable payment range. Thus the lowest income group was offered fifteen amounts in the *range* where many were likely to value water quality -- $0 to $50

-- whereas the highest income group only had five amounts in this range on their card.

Relational Bias

Range restriction/expansion bias deserves careful attention in studies using the payment card, especially those using the unanchored version. One purpose of the income-based anchors is to help mitigate this problem by providing a rationale. for the range of amounts on the card. But the anchors themselves pose a potential source of bias because there is the possibility that respondents would rely on them for more guidance than they are intended to give in the manner described by Kahneman et al.'s "anchoring" heuristic. In order to assess this possibility we conducted an experiment in our 1980 pilot study where we varied the number and amount of the anchors. The results of this experiment, and an examination of the distribution of responses relative to the anchors in the present study, gives us reason to believe that our anchors do not bias our findings in any significant way.

A national probability sample of 1576 people were personally interviewed in our 1980 pilot study. This sample was divided into four equivalent subsamples, three of which (A-C) were presented with different versions of the payment card. The variations we tested and their rationale are as follows:

1. We varied the number of nonenvironmental public goods anchors from four in versions A and C to five in Version B. The extra good in version B was police and fire protection. The amount which we estimated households spent on this good ($98, $125, $312 and $626 for the four income levels) was such that it placed police and fire protection on the payment card where we guessed many people might value water quality.[9] Except for the addition of the fifth public good, the payment cards for version B are identical to those for

version A. If the number or placement of the anchors affects the starting point we would expect the mean WTP amounts for B to differ from the amounts for the other versions.

2. In order to see whether people keyed their water benefit mounts to the anchors, version C used the same four public goods as version A, but each amount was increased by 25 percent. If the dollar level of the anchor or. benchmark goods determines the WTP amounts for water quality we would expect higher mean amounts for version C than for version A.

Table 2 summarizes the sample design for the tests of relational bias. The cases used for the test are fewer than those sampled because of nonresponses to the WTP questions and the removal of outliers. We used t tests to teat for the hypotheses:

Test I H_0: A = C
H_1: A < C

Test II H_0: A = B = C
H_1: A ≠ b, A ≠ C, B ≠ C

Where A, B, C refers to versions A, B, C.

Only two of the 24 paired comparisons were significantly different from zero (less than the number positive findings one would expect by chance at the .05 level) and both are in the opposite direction to that predicted If relational bias is present. A second test of starting point bias was conducted using regression analysis. Dummy variables were created for each of the three versions and two equations were estimated for pairs of versions. The first used one of the dummy variables as the sole predictor variable, the second added the set of predictor variables which are the best predictors of the WTP

9. The payment cards used in the present study, and shown in appendix A, are similar to those used in version B.

Table 2 STUDY DESIGN FOR PAYMENT CARD EXPERIMENT AND NUMBER OF CASES (IN PARENTHESIS)

Versions	Family Income Levels	Water Quality Levels
Scale cards with the estimated levels of payment for apace, A highways, public education and defense for each of the four. income categories. (431)*	i. $9,999 or less (117) ii. $10,000 to 14,999 (58) iii. $15,000 to 24,999 (112) iv. $25,000 and above or not sure/refused (92)	D Okay for (boating (2.5 on 10 step ladder) C Game fish like bass can live in it (5.0) B Safe for swimming (7.0)
B Scale cards with correct payment levels for the four public goods used for A plus police and fire (380)	Same as A i. (170) ii. (66) iii. (98) iv. (62)	Same as A
C Scale cards with same four public goods used for A but the payment levels listed are 25% higher than those used for Version A (410)	Same as A i. (116) ii. (58) iii. (126) iv. (74)	Same as A

*The total number of cases for each version exceeds the sum of the number of cases ascribed to each income level for that version owing to the absence of income data for some respondents.

amounts. If H_0 in teat II is Incorrect, the dummy variables for the versions should enter the equations significantly (as measured by the t values). Table 3 presents the results of these estimations. None of the version dummy variablea are significant and there la an impressive stability across the versions in the multivariate estimations, confirming that the anchors do not

Table 3 TEST FOR STARTING POINT BIAS

Variables

Level C	Amount willing to pay annually for fishable water in dollars
VERA	Dummy variable for Version A
VERB	Dummy variable for Version B
VERC	Dummy variable for Version C
INCOMER	Household income in dollars in 10 categories
EDUC	Education in 7 categories
AGECAT	Ade in 11 categories
ENVINDEX	Index of environmental atti tudes*
USERD	Dummy variable for water use
CNPOLD	Dummy variable for concern over water pollution

	A & B	A & C	B & C
Intercept	179.44 (10.7)	190.6 (10.8)	190.6 (11.5)
VERA	32.4 (1.4)	21.4 (.9)	
VERB			11.1 (-.5)
N_2	515	500	481
R^2	.003	.002	.001
F	1.9	.79	.24

t values are given in parenthesis

	A & B	A & C	B & C
Intercept	-30.4 (-0.60)	-8.2 (-.15)	-21.4 (0.44)
INCOMER	.0072 (8.95)	.0069 (8.4)	.0073 (9.3)
EDUC	16.8 (1.85)	13.9 (1.4)	15.1 (1.78)
AGECAT	-10.5 (-2.88)	-8.7 (-2.3)	-8.4 (-2.5)
ENVINDEX	26.06 (3.81)	29.8 (4.3)	30.9 (5.2)
USERD	54.41 (2.33)	40.9 (1.74)	27.46 (1.3)
CNPOLD	44.47 (1.95)	48.3 (2.1)	64.8 (3.2)
VERA	21.58 (1.03)	12.22 (.58)	
VERB			-12.7 (-.67)
N_2	472	467	451
R^2	.30	.29	.34
F	27.9	27.3	32.4

*Composed of 7 items ranging from attitudes towards the environmental movement to the importance of environmental problems in the respondents' hierarchy of issues.

bias the findings.

We did not conduct any payment card experiments in the present study. Table 4, however, presents the distribution of our WTP_R responses for each of the five payment oarda. These data permit a visual assessment of whether the distribution la determined by the anchor amounts which are Indicated on the margins of each subtable. If relational bias is present, It is moat likely to occur in the distribution for the first of the water quality levels, the boatable WTP amounts (WTPB). The only time clustering occurs near one of the anchors is when the apace program and police and fire anchors are adjacent to popular round numbers such as $10 (Card A), $25 (B), $50 (A,C) and $100 (B). Since similar clustering at the popular numbers occurs when these numbers are not near any of the anchors,we conclude that the anchors do not bias our estimates.

Although these teats show no evidence of relational bias, further tests of the anchored payment card are advisable. Perhaps the 25 percent difference in the first experiment was too small to show an effect despite the fact that our sample sizes were reasonably large for this experiment. Tests of range restriction/expansion bias would also be useful. It should not be difficult to demonstrate range effects at the extreme;what is important to know is whether relatively small changes in range have effects on the WTP amounts in otherwise adequately designed CV studies.

The Unanchored Payment Card

Do payment cards really need to uae anchors? Although we have provided evidence that relational bias due to the anchors is not a problem in this study, using unanchored payment cards would be simpler and leas risky. The use of anchors is not a simple matter, owing to the need to derive the anchors and prepare different sets of payment cards for each income level. The anchors

Table 4 DISTRIBUTION OF RESPONSES FOR 1983 WATER BENEFITS STUDY
BY PAYMENT CARD

A. Under 10,000

WTP8	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
0				28.000
1	39	39	21.0	30.400
3	1	40	0.8	31.200
5	12	52	9.6	40.800
10	14	65	11.2	52.000
12	1	66	0.8	52.800
15	3	69	2.4	55.200
20	10	79	8.0	63.200
25	11	90	8.8	72.000
30	3	93	2.4	74.400
		94	0.8	75.200
33	4	98	3.2	78.400
45	2	100	1.6	80.000
50	13	103	2.4	82.400
		115	9.6	92.000
60	1	116	0.8	92.800
75	1	117	0.8 0.6	93.600
	5			94.400
100	2	123	4.0	98.400
200		125	1.6	100.000

WTPF	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
0	36	36	28.800	28.800
1				
2	1	41	4.800	32.800
3	1	43	0.800	34.400
4	1	44	0.800	35.200
10	12	56	9.600	44.800
12	21	78	16.800	62.400
15	4	83	3.200	66.400
20	7	90	5.600	72.000
25	7	9	5.600	77.600
			2.400	80.000
30		97 101	0.800	80.800
33	1	100 102	0.800	81.600
40	1	103	0.800	82.400
45	1	101	0.800	83.200
50	9	113	7.200	90.400
55	2	115	1.600	92.000
60			0.800	92.800
70	1	116	1.600	94.400
75	3	1 121	2.400	96.800
100	4	125	3.200	100.000

WTP5	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
0	56	56	44.800	44.800
1	2	58	1.600	
3	2	60	1.600	
5	12	72	9.600	57.600
9	1	73	0.800	58.400
10	10	83	8.000	66.400
15	1	84	0.800	67.200
20	3	87	2.400	69.600
25	9	96	7.200	76.800
30	4	100	3.200	80.000
34	2	101	0.800	
35	2	103	1.600	82.400
		105	1.600	84.000
45	2	107	1.600	85.600
50	7	114	5.600	91.200
90	1	115	0.800	92.000
100	1	123	0.800	92.800
	1			
120	1	121	0.800	99.200
180		125	0.800	100.000

WTPTOT2	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
0	22	22	17.600	17.600
2	3	25	2.400	20.000
5	1	26	0.800	20.800
6				
9	1	29	0.800	23.200
10	1	33	0.800	26.400
15	6	60	0 .800	27.200
			4 .800	32.000
25	5	45	4.000	36.000
30		50	4.000	40.000
32	11	59	7.200	47.200
		65		48.000
35	6	64		52.800
40	4	70		
50		71	3.200 3.200	56.000 59.200
55	13	77	2 .400	61.600
	1	79	1 .600	63.200
60	3	80	0.800	64.000
65		93	2.400	66.400
70	4	87	3.230	69.600
75	3	90	2.400	72.000
85	1	91	0.800	72.800
90	2	93	1 .600 74	.400
100	9	101	6.400	80.800
110	2	103	1.603	82.400
112	1	105	0.800	03.230
120	1	106	0.800 84	.000
	1		.800	84.800
130	1	107	0.800	85.600
135	1	108	3.800	86.400
140	1	109	0.800	87.200
145		110	0.800	88.000
150	2	112	1.600 0	89.600
160	1	113	0.800	90.400
210	6	119	4.800	95.200
225	1	120	0.800	96.000
240	1	122	0.8.800	96.800
				98.400
250	1	123	0.800	99.200
275	1	124	0.990	
280	1	125	3.993	100.000

Anchors

SP = Space Program
P&F = Police and Fire Protection
R&H = Roads and Highways
PE = Public Education (Primary & Secondary)

See appendix A for the format of each card.

HTPB	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
0	24	24	15.584	15.584
1	2	26	1.299	16.883
5	10	36	6.494	23.377
10	13	49	8.442	31.818
15	6	55	3.896	35.714
20	9	64	5.844	41.558
SP 25	9	73	5.844	47.403
30	4	77	2.597	50.000
35	2	79	1.299	51.299
40	5	84	3.247	54.545
49	2	86	1.299	55.844
50	19	105	12.338	68.182
55	1	106	0.649	68.831
70	4	110	2.597	71.429
75	3	113	1.948	73.377
80	1	114	0.649	74.026
90	4	118	2.597	76.623
P&P 95	1	119	0.649	77.273
100	20	139	12.987	90.260
120	1	140	0.649	90.909
125	1	141	0.649	91.558
R&H 180	1	142	0.649	92.208
200	2	144	1.299	93.506
250	2	146	1.299	94.805
300	1	147	0.649	95.455
450	1	148	0.649	96.104
490	1	149	0.649	96.753
PE 500	2	151	1.299	98.052
505	1	152	0.649	98.701
550	1	153	0.649	99.351
600	1	1%	0.649	100.000

HTPF	FREQUENCY	CUM FREQ	PERCENT	CUN PERCENT
		31	20.130	
1	31	35	2.597	20.130
2	4			22.727
	11	3b	0.649	23.377
5	10	47	7.143	30.519
10		64		
12	1	640.64	2.59.390	44.41.558
15				
20		78	6.494	50.649
25	10			
30	14		2.597.792	63.636.44039
40	1		2.597..	
45	15	99	0.649	64.286
50		114	9.740	74.026
60	1	115	0 .649	74.675
75	4	119	2597 7 7 . 2 7 3	
80	1	120	0.649	17.922
90	1	121	0.649	78.571
100	11	136	9.740	88.312
110	2	137	0.649	88.961
125		139	1.299	90.260
170	5	144	3.247	93.506
180	1	145	0.649	94.156
	1	146	0.649	94.805
200	2	148	1.299	96.104
250	3	151	1.948	90.032
290	1	152	0.649	98.701
300	1	153	0.649	99.351
500	1	154	0.649	100.000

HTPS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
1	45	45	29.221	29.221
2	3	48	199.649	31..818
		49		
5	14	63	9.091	40.909
10	12	75	7.792	48.701
12	1	76	0.649	49.391
15	5	77	0.649	50.000
20	12	82	3.247	53.242
25		94	7.792	61.039
30	2	96	1.299	62.338
40	1	97	0.649	62.987
45	1	98	0.649	63.636
50	16	114		
90	1	115	10.649	.0.675
95	1	116	3.669	75.325
100	14	130	9.091	84.416
120	1	131	0.649	85.065
150	9	140	5.844	90.909
170	1	141	0.649	91.553
180	1	142	0.649	92.201
200	3	145	1.948	94.156
240	1	146	0.649	94.805
250	2		1.299	96.104
280	1	149	0.649	96.753
300	2	151	1.299	93.332
320	1	152	0.649	98.101
400	1	153	0.649	99.351
500	1	154	0.649	100.000

HTPTOT	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
		10	6.494	6.494
1	10	11	0.649	7.143
2	1	12	0.649	7.792
3	2	14	1.299	9.091
4	1	15	0.649	9.740
10	4	19	2.597	12.338
15	2	21	1.299	13.1636
20	5	26	3.247	16.883
SP 25	7	33	4.545	21.429
27	1	34	0.649	22.078
30	1	35	0.649	22.727
35	4	39	2.597	25.325
40	4	43	2.597	27.922
45	3	46	1.948	29.870
50	8	54	5.195	35.065
55	3		1.948	37.013
60	3	60	1.948	38.961
65	1	61	0.649	39.610
70	6	67	3.896	43.506
75	4	71	2.597	46.104
80	1	72	0.649	46.753
P&P 90	2	74	1.299	48.052
95	1	75	0.649	48.701
100	10	85	6.494	55.195
125	1	86	0.649	55.844
140	1	87	0.649	56.494
145	1	88	0.649	57.143
150	6	94	3.896	61.039
155	2	96	1 .299	62.338
160	1	97	0.649	62.987
170	2	99	1.299	64.286
175	2	101	1.299	65.584
R&H 180	2	103	1.299	66.883
195	1	106	0.649	68.182
			3.247	68.831
200	5	111		72.078
210	1	112	0.669	72.727
225	2	114	1.299	74.026
250	3	117	1.948	75.974
262	1	118	0.649	76.623
275	1	119	0.649	77.273
300	7	126	4.545	31.310
325	2	128	1.299	83.117
335	1	129	0.649	83.766
390	4	133	2.597	86.364
375	2	135	1.299	47.662
400	3	138	1.943	09.610
445	1	139	a.549	90.260
450	2	141	.299	91.538
490	1	142	0.649	92.208
PE 500	4	146	2.597	94.805
550	1	147	0.649	95.455
700	1	148	0.649	96.104
735	1	149	0.649	96.753
000	3	152	1.948	93.701
830	1	153	0.649	99.351
850	1	154	0.649	100.000

C. Income $20,000 - $29,999

WTPB	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
0	19	19	14.615	14.615
1	1	20	0.769	15.385
3	1	21	0.769	16.154
5	1	22	0.769	16.923
10	16	38	12.308	29.231
20	7	45	5.385	34.615
25	3	48	2.308	36.923
30	6	54	4.615	41.538
40	4	58	3.077	44.615
50	23	81	17.692	62.308
60	4	85	3.077	65.385
70	1	86	0.769	66.154
75	1	87	0.769	66.923
80	2	89	1.538	68.462
95	1	90	0.769	69.231
100	22	112	16.923	86.154
150	4	116	3.077	89.231
190	2	118	1.538	90.769
200	6	124	4.615	95.385
350	3	127	2.308	97.692
360	1	128	0.769	98.462
400	1	129	0.769	99.231
850	1	130	0.769	100.000

WTPF	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
0	14	14	10.769	10.769
1	1	15	0.769	11.538
3	1	16	0.769	12.308
5	2	18	1.538	13.846
10	12	30	9.231	23.077
15	11	41	8.462	31.538
20	9	39	6.154	30.000
25	6	45	4.615	34.615
30	6	51	4.615	39.231
40	6	57	4.615	43.846
45	1	58	0.769	44.615
50	20	78	15.385	60.000
60	4	82	3.077	63.077
75	5	87	3.846	66.923
80	2	89	1.538	68.462
90	1	90	0.769	69.231
100	21	111	16.154	85.385
150	8	119	6.154	92.308
170	1	120	0.769	93.077
175	1	121	0.769	93.846
200	3	124	2.308	96.154
240	1	125	0.769	96.923
300	1	129	0.769	99.231
900	1	130	0.769	100.000

WTPS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
0	34	34	26.154	26.154
2	1	35	0.769	26.923
5	3	38	2.308	29.231
10	4	42	3.077	32.308
20	6	48	4.615	36.923
25	5	53	3.846	40.769
30	3	56	2.308	43.077
35	1	57	0.769	43.846
40	5	62	3.846	47.692
50	14	76	10.769	58.462
60	3	79	2.308	60.769
75	4	83	3.077	63.846
80	1	84	0.769	64.615
85	1	85	0.769	65.385
90	1	86	0.769	66.154
100	23	109	17.692	83.846
102	1	110	0.769	84.615
120	1	111	0.769	85.385
150	1	115	3.077	88.462
170	1	116	0.769	89.231
175	1	117	0.769	90.300
200	3	120	2.308	92.308
250	2	122	1.538	93.846
300	3	125	2.308	96.154
450	1	126	3.769	96.923
500	3	129	2.339	99.231
1000	1	130	0.769	100.000

WTPTOT	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
0	2	2	1.538	1.538
2	1	3	0.769	2.309
8	1	4	0.769	3.377
10	3	7	2.308	5.385
20	5	12	3.846	9.231
30	1	13	0.759	10.500
35	1	14	0.759	10.769
40	3	17	2.308	13.077
45	1	18	0.759	13.846
50	6	24	4.615	18.462
52	1	25	0.759	19.231
55	1	26	0.759	20.000
CO	3	29	2.300	22.308
70	1	30	0.769	23.077
75	4	34	3.077	26.154
80	3	37	2.308	28.462
90	1	38	3.759	29.231
95	1	39	0.759	SO.000
100	10	52	7.692	37.692
110	3	55	2.301	40.000
120	3		2.399	42.308
125	3	58	2.308	44.615
130	2	60	1.538	46.154
140	1	61	3.759	46.923
150	8	59	6.154	53.077
175	1	70	0.769	53.846
180	1	71	6.769	54.615
190	3	73	1.53.	56.154
200	1	74		
			2.301	59.23
0	5	92	3.846	63.077
20			0.759	63.846
225	1	84	0.759	64.615
225	2	86	1.538	66.154
240	1	et	0.769	56.923
290	5	92	3.846	70.769
300		101	6.923	77.692
320	1	102	0.769	78.462
325	1	103	0.759	79.231
345	1	104	0.759	80.000
350	2	156	1.538	81.538
360	1	107	0.769	82.308
375	1	108	0.759	83.077
380	1	109	0.759	83.846
400	2	111	1.539	85.385
440	1	112	0.769	86.154
450	2	114	1.538	87.692
460	1	115	0.769	88.462
500	5	120	3.846	92.308
525	1	121	0.759	93.377
600	1	122	0.769	93.846
700	2	124	1.530	95.385
730	1	125	.9	96.154
850	1			96.923
1000	2	128	0.759	98.462
1122	1	129	0.759	99.231
1150	1	130	3.769	100.000

D. Income $30,000 - $49,999

WTPB	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
0	13	13	13.402	13.402
5	3	16	3.093	16.495
15	1	17	1.031	17.526
20	3	20	3.093	20.619
24	1	21	1.031	21.649
25	7	28	7.216	28.866
30	3	31	3.093	31.959
45	1	32	1.031	32.990
50	11	43	11.340	44.330
60	2	45	2.062	46.392
75	3	53	3.093	54.639
SP 90	5			
100	11	64	11.340	65.979
120	4	68	4.124	70.103
150	5	73	5.155	75.258
180	1	74	1.031	76.289
200	6	80	6.186	82.474
250	2	82	2.062	or.536
300	1	85	3.093	87.629
350	2	88	12.362.031 90.722	88.660
400				
P&P 420	1	99	1.031	91.75
500	2	91	91.753	
R&H 700	2	93	2 .062 93.914	99.876
770	1	94	2 [illegible]	
850	1	95	1 1.031	96.907 1.935
1070	1	97	1.031	100.969
1220				

WTPF	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
0	11	11	11.340	X1.340
5	3	14	3.093	14.433
10	4	18	4.124	18.557
25	9	27	9.279	27.835
30	4	31	4.124	31.959
50	13	44	13.402	45.361
55	1	45	1.031	46.392
60	2	47	2.062	48.454
79	3	50	3.093	51.546
90	1	51	1 33,	52.577
100	15	66	15.454	68.041
120	1	67	1.011	69.072
125	1	L8	1.031	70.103
150	4	72	4.124	74.227
	1	82	1.031	75.258
290	9	99	9.278	84.536
300	7		7.216	91.753
360	1	90	1.031	92.784
400	1	91	1.031	93.814
450	1	92	1.031	94.845
600	2	94	2.062	96.907
600	2	96	2.062	98.969
680	1	97	1.031	100.000

WTPS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
0	19	19	19.588	19.588
5	5	24	5.155	24.742
10	1	25	1.031	25.773
15	1	26	1.031	26.804
20	2	28	2.062	28.866
25	5	33	5.155	34.021
30	2	35	2.062	36.082
46	1	36	1.031	37.113
50	11	47		48.454
60	4	51	4.124	52.577
75	2	53	2.062	54.639
90	2	55	2.062	56.701
100	10	65	10.309	67.010
150	2	67	2 .062	69.072
175	1	68	1 1.031	70.103
200	7	75	7.216	77.320
				78.351
250	2	78	2.062	80.412
270	1	79	1.031	81.443
300	9	88	9.278	90.722
400	2	90	2.062	92.784
500	3	93	3.093	95.876
600	1	94	1.031	96.907
700	1	99	1.031	97.938
1000	1	96	1.031	98.969
1500	1	97	1.031	100.000

WTPTOT	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
15	1	1	1.031	I.031
20	1	2	1.031	2.062
25	1	3	1.331	3.093
30	2	5	3.093	6.186
40	2	a	2.062	8.247
50	1	10	2.052	10.309
70	3	14	1.031	11.340
SP 75		21	3.093	14.433
100	7		7.216	21.649
105	1	23	1.031	22.680
110	3	26	1.031	23.711
120			3.093	26.804
125	1	30	1.031	27.835
150	3	31	3.093	30.928
160	1		1.031	31.959
170	1	32	1.031	32.99~
200	5	37	5.155	38.144
210	5	42	5.155	43.299
	1	43	1.031	44.330
	2	45	2.362	46.392
240	1	44	1.031	47.423
250	2	[illegible]	2	49.491
270	2	50	2 [illegible]	51.546
275	1	51	1.031	52.577
300	7	58	7.216	S9.794
350	1	59	1.031	60.825
390	1	60	1.031	61.856
400	4	4	4.124	65.979
450	1	b5	1.031	67.010
P&P 475	1	66	1.031	68.041
500	6	72	6.196	74.227
550	1	73	1.031	75 .258
570	1	74	1.031	7b.299
600	4	78	4.124	80. 12
650	1	79	1.031	a d 4 3
R&H 700	2	81	2.062	83.505
800	1	82	1.031	84.556
850	1	83	1.331	85.567
870	1	84	1.031	86.598
900	2	86	2.062	88.660
1000	2	88	2.062	90.722
1050	1	89	1.031	-91.753
1100	1	90	1.031	92.784
1150	1	91	1.031	93.814
1320	1	92	1.031	94.845
1520	1	93	1.031	95.876
	1	94	1.031	96.907
1700	1	95	1 . 0 3 1	97.938
2020	1	96	1.031	98.969
2270	1	9 7	1.031	100.000

E. Income $50,000 and over

WTPB	FREQUENCY	C M	FREQ	PERCENT	CUM PERCENT
0	4		4	9.756	9.756
5	2		6	4.878	14.634
10	1		7	2.439	17.073
25	2		9	4.878	21.951
50	2		11	4.878	26.829
80	1			2.09	29.268
100	3		12	7.317	36.585
200	4		15	9.756	46.341
300	5		20	12.195	U.337
SP 330	1		25	2 W	
400	1		26	2 . 4 3 9	
450	2		27	2.439	65.854
500	1		29	4.878	TO.732
650			30	2.439	73.111
750	1		31	2.439	75.610
950	1		32	2.439	78.349
1000	1		33	2.439	80.488
1050	1		34	2.439	02.921
P&P 1250	1		36	4.878	87.805
1400	1		33	2.439	90.244
1650				2.439	92.683
R&H 1760	1		39	2.439	95.122
1860	1		40	2.439	97.561
2060	1		41	2.439	100.000

WTPF	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
0	6	6	14.A39	14.634
5	2	8	4.878	19.512
25	1	12	2.439	21.951
30	1	13	1.317	29.268
			2.439	31.707
50	3	16	1.311	39.024
100	6	22	14.634	53.659
150	4	24	4.879	80.531
200	2	30	9.756	68.293
230	2	32	4.879	73.171
300	2	32	4.878	10.019
350	2	34	4.878	82.927
500	2	36	4.878	87.805
1000	2	38	4.878	92.683
1030	1	39	2.439	99.122
1350	1	1	2.439	97.361
3520	1	41	2.439	100.000

WTPS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
3	16	14	39.024	-39.029
10	11	17	2.439	41.463
		19	4.879	46.341
50	1	21	2.439	48.780
100	4	25	2.639	51.220
			9.756	60.976
		29	9.756	10.732
200	4			
250	2	31	4.878	75.610
300	2	33	4.878	80.488
400	1	3:	2.439	8271 21
				85.366
600	1	36	2.439	87.805
1000	1	37	2.639	90.299
1030	1	38	2.439	92.683
1500	1	39	2.439	95.122
5150	1	40	2.439	197.561

WTPTOT	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
25	1	1	2.439	2.439
75	1	4	2.639	4.730
85	1	5	4.878	12.756
90	1	6	2.439	14.634
200	1	8	2.439	II.373
235	1	9		19.312
	1	10	2.09	24.390
SP 250	1	11	2.439	26.829
380	1	12		
400	3	15	2.439	29.268
450	2	17	7.317	36.585
500	2	19	4.878	41.463
550	1	20	4.879	46.341
			2.439	48.780
600	2	22	4.878	53.659
750	1	23	2.439	56.098
800	2	25	2.439	58.537
		27	4.878	65.854
850	1	28	2.439	68.293
P&P 1250	3	31	7.317	75.610
1500	1	32	2.439	78.349
1600	1	33	2.439	80.488
R&H 1750	1	34	2.439	B2.927
1860	1	35	2.439	85.366
2000	1	36	2.439	87.805
2650	1	37	2.439	90.244
3000	1	38	2.439	92.683
3650	1	39	2.439	95.122
PE 4120	1	40		97.141
10560	1	41	2.439	100.000

also pose the possibility of range restriction/expansion bias. In the present study income is strongly related to people's WTP values. We attribute this effect to people's discretionary allocation of their disposable income. An alternative explanation, which we consider to be unlikely, would be that the WTP amounts given by those with higher incomes are an artifact of the the larger ranges shown to these respondents on their payment cards.

If the anchors help respondents arrive at a meaningful value for water quality, we would expect the following differences in WTP amounts elicited by anchored vs. unanchored payment cards:

I SEM Anchored < SEM Unanchored

II R^2 Anchored > R^2 Unanchored

Where SEM is the standard error of the mean. These hypotheses are based on the assumption that, lacking the context provided by the anchors, the respondents in the unanchored treatment are more likely to guess at their values for water quality. Thus, their WTP amounts should have an additional increment of variance (standard error of the mean), compared with the anchored results, and be leas well explained by regression analysis.

We tested these hypotheses on a small sample as part of our formal pretest for this study. One hundred respondents were personally interviewed in the summer of 1983 by the Research Triangle Institute (RTI) In the summer of 1983. Three experienced RTI interviewers administered a draft version of the questionnaire to a nonprobability sample of North Carolina residents who were selected to represent a full range of respondent types. This sample was divided into two subsamples which were as equivalent as possible. Subsample A received the version of the questionnaire with the act of five anchored payment cards use in this study and B an identical, but unanchored set. Since the range and increments of both sets of payment cards varied by income category,

the experiment does not provide any insight into possible range restriction/expansion bias.

Table 5. TEST OF ANCHORED VS UNANCHORED PAYMENT CARDS

Boa table

	Median	Chi Square	Mean	SEM	t Teat	N
Anchored	$80	.11	$77	12	.65	23
Unanchored	63	.16	93	21		26

Total WTP

	Median	Chi Square	Mean	SEM	t Teat	N
Anchored	$200	1.11	$285.	48	1.13	23
Unanchored	350		375	64		26

Table 5 presents the WTP amounts for the boatable water quality level, where we would expect the strongest bias if it is present, and for the total amounts given for the three levels. The data is for all the cases in the pretest who gave uaable WTP amounts." Because of the very small sample size, these findings must be regarded as tentative. With this proviso in mind, it appears that the two types of payment cards in this experiment measure the same level of benefits as none of the comparisons between the mean and medians for the boatable or the swimmable (total) levels is statistically different. As predicted, however, the standard errors of the mean are somewhat larger for the

10. Respondents were dropped from analysis if a response to one of the three water quality levels ma missing and/or if their WTP amount was greater than five percent of their income. An equivalent number of nonusable WTP responses was obtained from each treatment and the distribution of incomes for the two subsamples were very similar.

unanchored treatment. The results of the regression analysis (not reported here) is also in the predicted direction with the anchored treatment showing an adjusted R^2 of .14 compared with.10 for the unanohored treatment. Consistent with these findings and our expectations,the interviewers strongly preferred the anchored payment card which they said was easier to administer.

Conclusion

There is strong reason to believe that the bidding game la too vulnerable to bias to be used in a CV study such as this one. The available evidence which we have reviewed in this chapter supports the anchored payment card as a viable alternative to the payment card. This technique avoids the possibility of starting point and yea-saying bias and relational bias from the anchors does not appear to be a significant problem. Cur pretest experiment and the estimations reported earlier in chapter 2 show the WTP amounts elicited by the anchored payment card are explainable. Roth the RTI and the Opinion Research Corporation interviewers found it easy to use. Although our data do not allow us to make a judgment about its ability to produce usable responses relative to the other nonpayment card techniques, Tolley and his collaborators (Tolley et al., 1983 found it superior to the other elicitation techniques they compared it with -- the checklist, bidding game, and variable offer approach -- in this respect.

These judgments, It should be emphasized, are for the anchored version of the payment card. On a priori grounds we believe it should be superior to the unanchored version,and our experiment provides some evidence in support of this contention. They also are specific to this study. We have emphasized the importance of designing the payment card in such a way that the range of amounts presented on the card and the increments between the amounts are suitable for the study in which the card is used. More experience with the

anchored payment card is necessary before an informed judgment can be rendered about bow It should be implemented and the kinds of studies for which it is beat suited.[11]

11. See Mitchell and Carson (1984) for a discussion of the design principles which should guide the construction of payment cards for CV studies.

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INTERVIEWER: Hand Respondent a
Filled out "Thank You" pamphlet

STUDY # 00-00

"Appenidx A

Line #

Location #

Supervisor's Name:

Codebook for Resources for the Future
NATIONAL WATER BENEFITS SURVEY
Robert Cameron Mitchell, Study Director
January, 1984

Respondent's Name: Mr. Mrs. Miss
(Circle)

Address:

City: State: Zip Code

Telephone # ☐☐☐-☐☐☐-☐☐☐☐
Area Cdde

Date of Interview: Time: AM PM
(Circle)

Length of Interview: Minutes

INTERVIEWER: IF RESPONDENT REFUSES TO GIVE YOU HIS/HER TELEPONE NUMBER, SAY:

"I need your telephone number in order for my supervisor to confirm that this interview was conducted properly and that I performed my job in a courteous and businesslike fashion. No one else will ever have access to your number."

INDICATE: 1 TELEPHONE NUMBER OBTAINED
2 REFUSED

I hereby certify that this is an honest interview taken in accordance with my instructions.

Interviewer's Signature Date

FOR OFFICE USE ONLY

DATE	TIME	RESULT	COMMENTS	VERIFIED BY

LOCATION #: _____ 65450
LINE NUMBER: _____ 110383
FORM A

WATER BENEFITS SURVEY

INTERVIEWER: _____ TIME ENDED: _____

INTERVIMER ID. #: _____ TIME STARTED: _____

DATE: _____ INTERVIEW LENGHT: _____ (MINUTES)

Hello, I'm _____ of Opinion Research Corporation in Princeton, New Jersey. We are talking to a cross-section of people in the United States about how much public programs are worth to them Your views will be used to help policy makers make informed decisions.

First let me begin by saying that most of the questions have to do with your attitudes and opinions, and there are no right or wrong answers.

This interview is completely confidential; your name will never be associated with your answers.

1. First, I'm going to read a list of several issues which, over the years, have been of concern to taxpayers. For each, please tell me whether you feel the amount of money we are spending as a nation is too much, just about the right amount, or too little.

		Too Much	About the Right Amount	Too Little	DON'T KNOW	REFUSED	
RAIRPOL	a. Reducing air pollution	1 13%	2 42	3 44	4(154)	5(1)	658
FCRIME	b. Fighting crime	1 7%	2 25	3 68	4(63)	5(5)	745
RWATPOL	c. Reducing water pollution in freshwater lakes, streams, and rivers	1 5%	2 38	3 57	4(130)	5 (0)	683
		ASK 4.2	ASK Q.4	ASK 4.3	ASK 4.4		

2

IF Q.1c IS "TOO MUCH", ASK:

Q1TM

2. You said *that* we are spending "Too much money" on reducing water pollution in freshwater lakes, streams,-and rivers. In your opinion, do you think we should be spending a great deal less or only a little less on reducing water poll ution?

33%	1	Great deal less	→ SKIP TO Q.4
67	2	A little less	
(4)	3	DON'T KNOW	
(2)	4	REFUSED	

27

IF Q.1c IS "TOO LITTLE", ASK:

Q1TL

3. You said that we are spending "TOO little money" on reducing water pollution in freshwater lakes, streams and rivers. In your opinion, do you think we should be spending a great deal more or only a little more on reducing water pollution?

47% 1 Great deal more
53 2 A little more
(32) 3 DON'T KNOW
(4) 4 REFUSED

354

read a great deal more

5 = Spe d a great 25%
4 a little more 27
3 Right amt 44
2 Little less 3
1 great deal less 1%

ASK EVERYONE
(HAND RESPONDENT BOOKLET) NR (130)

4. I'd like you to look at this booklet that contains several cards. Please look at Card 1. It contains three statements regarding pollution control and costs of pollution control. Please follow along as I read these statements to you, and then tell me which statement you agree with most. (READ EACH STATEMENT TO RESPONDENT.)

VPOLCST

59%	1	Protecting the environment is so important that pollution control requirements and standards cannot be too strict and continuing improvement must be made regardless of cost, or
25	2	We have made enough progress on cleaning up the environment that we should now concentrate on holding down costs rather than requiring stricter controls, or
8	3	Pollution control requirements and standards have gone too far and they already cost more than they are worth.
	9 4=1.5	BETWEEN 1 AND 2 (VOLUNTEERED)
(30)	5	DON'T KNOW
(3)	6	RENSED

780

5. Some national goals are more important to people than others. How important to you personally is a national goal of protecting nature and controlling pollution? Is it very important, somewhat important, or not very important to you?

POLGOAL

1	VERY IMPORTANT	64%
2	SOMEWHAT IMPORTANT	32
3	NOT VERY IMPORTANT	4
4	DON'T KNOW	

NR (1)

798

POLLUTE Q.5 + Q.6

1 = very top priority 32%
2 = Somewhat lesser 31
3 = Somewhat important 32
4 = Not very important 4

IF "1" ON Q.5, ASK:

6. You said a national goal of protecting nature and controlling pollution is "very important' to you. Would you say it is one of your very top priori ties or is-it of somewhat less importance to you? NR (15)

Pod FIMP

1	VERY TOP PRIORITY	52%
2	SOMEWHAT LESSER IMPORTANCE	48
3	DON'T KNOW	(7)

500

7. Please turn to Card 2. It contains a list of six different sources of water pollution in freshwater lakes, rivers and streams. Tell me which one or two sources you feel probably cause the most water pollution in the nation. Just read me the numbers.

96	9%	1	Runoff from agriculture
PSEW	51	2	Sewage from cities and towns
PDMIN	7	3	Drainage from mines
HRUN	7	4	Runoff from roads and highways
PGDUMP	27	5	Seepage from garbage dumps
PWAS	79	6	Dumping of factory waste into waterbodies
PDK		7	NONE
PF	2	8	DON'T KNOW
	<1	9	REFUSED

SPSUM = No. of items chosen 0, 1 or 2

WS

SECTION B: HOUSEHOLD ACTIVITIES 6RiD

INTRODUCTION: The next few questions concern participation in outdoor recreational activities by members of this household.

8. First, how many people -- both adults and children -- live in this household, including yourself?

HSNUM

01 Respondent only → SKIP TO Q JO
Number in household Including Respondent
(0) DON'T KNOW $\bar{M}$ 2.86
(0) REFUSED 1-12

9. How many of these people are under 18 years of age?

NCHILD

Number under 18 vrs. old
(•) 98 DON'T KNOW $\bar{M}$ 1.02
(2) 99 REFUSED 6-G
158 not asked = 0

10. Now about you. Please tell me your age at your last blrthday. RECORD IN HOUSEHOLD GRID IN "AGE COLUMN. CJRCCE APPROPRIATE SEX.

IF MORE THAN ONE HOUSEHOLD MEMBER, ASK Q.11, OTHERWISE SKIP TO Q.12.

11 Starting with the oldest amber of this household, please tell me the sex and age of the other household members, and their relationship to you. RECORD IN HOUSEHOLD GRID.

INTERVIEWER CHECK: MAKE CERTAIN THAT THE NUMBER OF RESPONDENTS LISTED IN THE GRID IS THE SAME AS THE NUMBER OF HOUSEHOLD MEMBERS IN Q.D.

ASK EVERYONE

12. During the past 12 months, that Is, since November, 1982, did you (or any member of this household over five years old) boat, fish, swim, wade or waterski in a freshwater river, lake, Pond or stream anywhere In the U.S. for recreatlonal purposes? Please keep In mind that this does not include. swimming in swiamtng pools or boating, fishing or swimming in the ocean.

USER

57% 1 Yes → GO TO INSTRUCTIONS FOR ACTIVITY GRID
43 2 No
(4) 3 DON'T KNOW → SKIP 10 Q.19
(1) 4 REFUSED

INSTRUCTIONS FOR ACTIVITY GRID

ASK 4.13 - 15 IN A SERIES FOR EACH HOUSEHOLD MEMBER OVER FIVE YEARS OLD, STARTING WITH THE RESPONDENT. THEN ASK Q.13 - 15 FOR EACH REMAINING MEMBER OVER 5 YEARS OLD.

13. Durlng the past 12 months, did (you/HOUSEIKILD MEMBER) use freshuater lakes, rivers or streams In thls state or any other state for recreational boating? By boating, I mean canoeing, kayacking, raftiug, motorboating, sailing, windsurfing, and waterskiing.

14. During the past 12 months did (you/HOUSEHOLD MEMBER) use freshuater lakes, rivers or streams Ins state or any other state for recrertlonal fishing?

15. During the past 12 months, did (you/HOUSEHOLD MEMBER) use fnshuater lakes, rivers or streams in thls state or any other state for recreational swimming?

FOR EACH "YES" IN Q.13 - 15, ASK Q.16 AND Q.17 IN A SERIES STARTING WITH THE RESPONDENT. THEN ASK Q.16 AND Q.17 FOR EACH REMAINGIN HOUSEHOLD MEMBER OVER 5 YEARS OLD. RECORD NUMBER OF DAYS ON GRID. RECORD "998" FOR "DONT' KNOW", "999" FOR "REFUSED" AND "000" FOR "NONE". PROBE NUMBER OF DAYS WITH: Your best estimate will do.

16. About how many days did (you/HOUSEHOLD MEMBER) go freslmatcr (boating/fishing/swimming) in this state?

17. About how many days did (you/HOUSEHOLD MEMBER) go freshwater (boating/fishing/swimming/) out of-state?

USER D

SECTION B: HOUSEHOLD ACTIVITIES GRID

R1BOATD R1BDLS R1BDOS R1FISHD R1FDLS R1FDOS R1SWIMD R1DLS R1DOS

	Q.11 RELATIONSHIP TO RESPONDENT	SEX M	SEX F	AGE	BOATING Q.13	BOATING 9.16 4 DAYS IN-STATE	BOATING Q.17 $ DAYS OUT-OF-STATE	FISHING Q.14	FISHING Q.16 4 DAYS IN-STATE	FISHING Q.17 4 DAYS OUT-OF-STATE	SWIMMING Q.15	SWIMMING Q.16 4 DAYS IX-STATE	SWIMMING Q.17 4 MYS OUT-OF-STATE
		R1SEX		R1AGE	27%			27%			32%		
1	RESPONDENT	1	2		1 YES 2 NO 3 DK 4 REF			1 YES 2 NO 3 DK 4 REF			1 YES 2 NO 3 DK 4 REF		
2		1	2		1 YES 2 NO 3 DK 4 REF			1 YES 2 NO 3 DK 4 REF			1 YES 2 NO 3 DK 4 REF		
3		1	2		1 YES 2 NO 3 DK 4 REF			1 YES 2 NO 3 DK 4 REF			1 YES 2 NO 3 DK 4 REF		
4		1	2		1 YES 2 NO 3 DK 4 REF			1 YES 2 NO 3 DK 4 REF			1 YES 2 NO 3 DK 4 REF		
5		1	2		1 YES 2 NO 3 DK 4 REF			1 YES 2 NO 3 DK 4 REF			1 YES 2 NO 3 DK 4 REF		
6		1	2		1 YES 2 NO 3 UK 4 REF			1 YES 2 NO 3 DK 4 REF			1 YES 2 NO 3 DK 4 REF		
7		1	2		1 YES 2 NO 3 DK 4 REF			1 YES 2 NO 3 DK 4 REF			1 YES 2 NO 3 DK 4 REF		
8		1	2		1 YES 2 NO 3 OK 4 REF			1 YES 2 NO 3 4 &			1 YES 2 NO 3 DK 4 REF		

R1USERD 46% one 9.3 owns

A-6

IF ANY HOUSEHOLD MEMBER FISHED, ASK Q.18; OTHERWISE SKIP TO Q.19
(ASK Q.18 ABOUT HOUSEHOLD MEMBER WHO FISHED THE MOST DAYS BOTH IN-STATE AND OUT-OF-STATE. IF MORE THAN ONE QUALIFIES, ASK ABOUT OLDEST MEMBER OF HOUSEHOLD.)

18. How important to (you/HOUSEHOLD MEMBER) is freshwater fishing as a recreational activity? Would you say it is . . . ?

FIMP

47% Very important
44 Somewhat important,
9 or Not at all important?
(0) DON'T KNOW → DON'T READ
(1) REFUSED

320

ASK EVERYONE

19. Did you (or any member of your household) swim in a swimming pool or in the ocean in this state during the past 12 months?

POOLOC

58% Yes
42 No
(2) DON'T KNOW
(2) REFUSED

808

20. During the past 12 months, did you (or any member of this household) take part in recreational activities on the shore of or near any freshwater lakes, river, or streams anywhere in the U.S.? These could be activities like picnicking, camping, bird watching, duck hunting, or living in a vacation cottage?

SHORE

58% Yes
42 No
(2) DON'T KNOW → GO TO SECTION C, PAGE 7
(2) REFUSED

809

IF "YES" TO Q.20, ASK:

21. Were these activities done in-state, out-of-state; or both?

SHORE ST

21% In-state
12 Out-of-state
27 Both
DON'T KNOW
REFUSED

467

SECTION C: WATER QUALITY LEVELS

This next series of questions is about different levels of water quality in the nation's lakes, rivers, and streams and about how much different levels of water quality in those freshwater bodies is worth to you (and all other members of this household).

In these questions, I will not be talking about saltwater, or water that is underground or about drining water. For the remainder of the interview, I will always be referring to the freshwater in lakes, rivers and streams across the country.

Because of growing water pollution problems nationwide, Congress passed strict water pollution control laws in 1972 and 1977 and provided money to pay most of the costs for building new sewage plants for communities. These laws also required many industries to install and pay for expensive water pollution control equipment.

The laws Congress passed are intended to improve the quality of water. One way of thinking about different levels of water quality is to use a ladder like the one shown on Card 3 of the booklet.

The top of the water quality ladder stands for the best possible quality of water, and the bottom of the ladder stands for the worst. On the ladder you can see the different levels of water quality. For example:

Level "D" (POINT) is so polluted that it has oil, raw sewage and other things like trash in it; it has no plant or animal life, smells bad, and contact with it is dangerous to human health.

Water at level "C" (POINT) is boatable. Water of this quality would not harm you if you happened to fall into it for a short time while boating or sailing.

In the United States today, because of water pollution control programs, this is now the minimum national quality level. In other words, the present quality of more than 99 percent of all the nation's freshwater lakes, rivers and streams is at least at this level. Those water bodies which can only be used for boating at the present time are mostly located in areas with a lot of industry and also where large numbers of people live. If we stopped spending money for water pollution control, the quality of these and many other water bodies would fall below the boatable level.

Level "B" (POINT) is fishable. Although some kinds of fish can live in boatable water, it is only when water gets this clean that game fish like bass can live In it. Today many of the nation's freshwater bodies are as clean as this.

Level "A" (POINT) is swimmable. Today perhaps 70 - 80% of the nation's freshwater is as clean as this.

22. Perhaps as I have talked, you have thought about the quality of water in this area. Think about the nearest freshwater lake, river, stream, pond or creek that is large enough so that game fish might live in it. It does not matter if it is manmade or not, how would you rate its quality of water? Choose a letter on the water quality ladder which you think best describes the water quality of this lake or pond. (PROBE: Your best estimate will do.)

LOCWATQ	LETTER ON LAOOER		CORRESPONDING NUMBER ON LAOOER
3Y.	1	0	(0 = less than 2)
15	2	C	(2 = less than 3)
36	3	B	(3 = less than 6)
43	4	A	(6 = less than 8)
3	5	More than A	(8 = 10)
(65)	6	DON'T KNOW	
(4)	7	REFUSED	

744

23. Now I'd like you to think about how much having clean water in the United States, including this state, is worth to you and (all members of your household). Some people believe that controlling water pollution is of great value, while other'people do not feel that control of water pollution is very important to them. Card 4 in your booklet shows various reasons why some people might value water quality. Please read it over.

Which two of these reasons, if any, for reducing water pollution are <u>most</u> important to you personally? Just read me the numbers.

RWPUSE	47%	1	Your (Your household's) use of freshwater for fishing, boating or swimmin
RWPIUSE	30	2	Your (Your household's) use of areas surrounding freshwater for picnicking, bird watching, or staying in a vacation cottage
RWPOTH	43	3	You (Your household) get satisfaction from knowing other people may use and enjoy freshwate
RWPNAT	57	4	You (Your household) get satisfaction from knowing that the nation's water is cleaner
RWPNONE	1	5	NONE/I DO NOT VALUE WATER QUALITY
RWPDK	1	6	DON'T KNOW
RWPRF	<1	7	REFUSED

RWPSUM No. of items 1-4 chosen. 0, 1 or 2

SECTION D: WATER QUALITY EVALUATION

In this next section of the questionnaire, I am going to ask you how much it is worth to you in real dollars and cents to reach three different national water qua1 ity goals. Since this is not something we usually think about, 'it may be helpful for you to know what the average household like yours pays in taxes and higher prices for some other types of public programs. In order to do this, mild you please look at the next card, Card 5, in the booklet and give me the letter next to the category which includes your (household's) total, yearly gross income from all sources, that is, before taxes in 1982. Once again, I'd like to remind you that this interview is completely confidential and your name will never be associated with your answers. (CIRCLE LETTER OF PAYMENT CARD CHOSEN.)

PAYCARD

			COLOR OF PAYMENT CARD
27%	1	A Under $10,000	WHITE
26	2	B $10,000 - $19,999	YELLOW
22	3	c $20,000 - $29,999	BLUE
18	4	D $30,000 - $49,999	GREEN
7	5	E $50,000 or more	PINK
(41)	6	F REFUSED-~ GIVE RESPONDENT BLUE PAYMENT CARD, AND SAY: If you would look at this payment card which reflect the middle range of incomes in the United States.	
(22)		NR	

750

GIVE RESPONOENT APPROPRIATE PAYMENT CARD FOR HIS/HER INCOME RANGE.

The payment card I have given you lists many different amounts. It also gives an estimate of how much households in your income range paid in 1982 in taxes and product prices for programs like the space program, police and fire protection, roads and highways, public education, and the defense program.

As you may also know, programs to control air and water pollution are also something we all pay for. We pay for water pollution control in two ways, as shown on the next card, Card 6.

First, part of the money we pay in federal and state taxes goes to construct sewage treatment plants, conduct research on water pollution and to enforce the water pollution laws. Any local taxes and sewer fees which are often part of your water bill help to pay the cost of running these plants.

The second way involves the price of things we buy. A small amount of the money you pay for many products goes for the water pollution control equipment the government requires industries to install. In order to pay for this equipment, companies increase somewhat the cost of the products they sell to consumers.

GIVE RESPONDENT WORKSHEET AND PENCIL. RESPONDENT SHOULD ALSO HAVE COLORED PAYMENT CARD. REFER TO WORKSHEET AS YOU READ.

Here are (POINTING TO THE LEVELS ON THE WORKSHEET) three national water pollution goals. The lowest one is goal C which is where we are today with 99 percent or more of all freshwater bodies at least at the boatable quality level, although many are higher in quality.

Goal B would be to raise the minimum level to where 99 percent or more of the freshwater bodies would at least be at the fishable level some game fish like bass could live in them.

Goal A would further raise the minimum level to where 99 percent or-more of the freshwater bodies would be swimmable.

I'm going to ask you to say how much (you are/your household is) willing to pay each year, if anything, to reach each of these three goals. In doing this, I want you to keep in mind:

- First, imagine that if the amount you are willing to pay is more than you are currently paying in taxes and higher prices for this purpose, your taxes would be raised to cover the cost. Of course, if the amount you are willing to pay is lower, you would receive a refund. In this way, every household in the country, including yours, has the opportunity to say how much they are willing to pay for water pollution control.

- Second, no matter what amount you give for water pollution control, you will also continue to pay for the nation's other environmental programs such as air pollution, and that air quality will remain at its-present level or improve slightly.

Do you have any questions?

(IF RESPONDENT ASKS HOW MUCH HE OR SHE IS CURRENTLY PAYING): I can't give you that information at this point in the interview, because we need to know how much water pollution control is really worth to you without any reference to what you are currently paying for it. However, in order to help you understand how much you are already paying for things the government provides, the payment card gives information about how much you are paying for other types of government programs. At the end of the interview, I will be glad to give you information about your actual payments for water pollution control.

24. First, Goal C. What amount on the payment card, or any amount in between, is the most you (your household) would be willing to pay in taxes and higher prices each year to continue to keep the nation's freshwater bodies from falling below the boatable level where they are now? In other words, what is the highest amount you (your household) would be willing to pay for Goal C each year before you would feel you are spending more than its really worth to you (all members of your household)?

WTP B I

ENTER DOLLAR AMOUNT HERE, ON FLAP AND ON WORKSHEET
000 ZERO OR "NOTHING"
998 DON'T KNOW
999 REFUSED

25. Would it be worth anything (more) to you (your household) to achieve goal B, where 99 percent or more of the freshwater bodies are clean enough so game fish like bass can live in them?

Q25

67% 1 Yes ● -* SKIP TO Q.26, PAGE 14

31 2 No
(57) 3 DON'T KNOW
(15) 4 REFUSED

→ SEE Q.24; IF DOLLAR AMOUNT GIVEN ON Q.24 THEN SKIP TO Q.27. IF "ZERO", "NOTHING" GIVEN ON- Q.24 AND "NO" ON Q.25 THEN SKIP TO Y1; ALL OTHERS SKIP TO Y3.

IF "ZERO", "NOTHING" TO Q.24 AND "NO" TO Q.25, ASK Q.Y1

Y1 People have different reasons for saying zero dollars or nothing. For some people that is al 1 water pollution control is worth to them They don't want to continue to pay anything for it as they are now in taxes and prices. Other people give different reasons for saying this. Did you say zero dollars because that is what water quality is worth to you (your household) or because of other reasons?

Q25Y1

16% 1 That is what it is worth to me (my household) → SKIP TO 4.37, PAGE 18
5 2 Did not realize I am currently paying for it, I thought that the money I gave would be in addition to what I am paying now
161
79 3 Some other reason (Specify): _____ → SKIP TO Q.Y3a
(7) 4 DON'T KNOW → SKIP TO Q.37, PAGE 18
(1) 5 REFUSED → SKIP TO Q.37, PAGE 18

Q25Y2

IF "2" ON Q.Y1, ASK:

Y2. You are already paying some amount for water pollution control in your taxes and prices. It is very important to us to learn what value you place on achieving the water quality goals when you are given the chance to make the choice yourself. Would you be willing to answer these-questions if I later tell you how much you are currently paying in taxes and prices and give you the chance to make any changes in your answers you would like to make?

43% 1 Yes → GO BACK TO Q.24
7
57 2 No
(1) 3 DON'T KNOW → SKIP TO Q.37, PAGE 18
(0) 4 REFUSED → SKIP TO Q.37, PAGE 18

IF "DON'T KNOW" OR "REFUSED" TO Q.24, AND "DON'T KNOW", OR "REFUSED" TO Q.25, ASK Q.Y3

Y3. People have different reasons for saying they don't know or can't answer these questions. I'm going to read you some reasons. Please tell me whether or not they represent your reelings about this question.

Y3a. Did you give this answer because you are (your household is) paying too much in taxes already and don't want to spend more?

25Y3A

62% 1 Yes → SKIP TO Q.Y4
187
38 2 No
(27) 3 DON'T KNOW → SKIP TO Q.Y5
(3) 4 REFUSED → SKIP TO Q.Y5

IF "YES" ON Q.Y3a, ASK:

25Y4

4 I'd like to ranind you that you are (your household is) al ready paying some amount for water pollution-control in your taxes and prices. It is very important to us to learn what value you place on achieving the water quality goals when you are given the chance to make the choice yourself. Would you be willing to answer these questions if I later tell you how much you are (your household is) currently paying in taxes and prices and give you the chance to make any changes in your answers you would like to make?

4% 1 Yes → GO BACK TO Q.24
105
96 2 No
(10) 3 DON'T KNOW → SKIP TO Q.37, PAGE 18
(1) 4 REFUSED → SKIP TO Q.37, PAGE 18

IF "NO", "DON'T KNOW" OR "REFUSED" ON Q.Y3a, ASK:

Y5. Did you give this answer because you think the government should be able-to meet this goal with the money they have-or because you think the government wastes too much money? (CIRCLE ALL THAT APPLY.)

Q25Y5

77

35% 1 Yes, government should be able to meet goal with the money they have
25 2 Yes, government wastes too much money
40 3 No
60 4 DON'T KNOW → SKIP TO Q.Y7
(1) 5 REFUSED

IF "YES," 1 OR 2 ON Q.Y5, ASK:

Y6. It is very important to us to learn what value you (your household) place on achieving the water quality goals when you are given the chance to make the choice yourself. This value is the highest amount you are (your household is) willing to pay for an efficient and worthwhile program to reach -each of the water quality goals. Would you be willing to answer these questions if I noted here that the amounts you give are based on the assumption that the water pollution programs would be efficient and well run?

Q25Y6

37

19% 1 Yes → GO BACK TO Q.24
81 2 No
(8) 3 DON'T KNOW → SKIP TO Q.37
(1) 4 REFUSED

IF "NO", "DON'T KNOW", "REFUSED" ON Q.Y5, ASK:

Y7. Did you give this answer because it is too hard to say without knowing what I am (my household is) is paying now for water pollution control?

Q25Y7

43

42% 1 Yes
58 2 No
(11) 3 DON'T KNOW → SKIP TO Q.Y9
(1) 4 REFUSED

Ii "YES" ON Q.Y7, ASK:

Y8. It is very important to us to learn what value you (your household) place on the water quality goals without being influenced by what you are (your household is) already paying for them. However, would you be willing to answer these questions if I later tell you how much you are currently paying in taxes and prices and give you the chance to make any changes in your answers you would like to make?

Q25Y8

7

0% 1 Yes → GO BACK TO Q.24
100% 2 No
(10) 3 → KNOW SKIP TO Q.37. PAGE 18
(1 4 REFUSED

IF "NO", "DON'T KNOW", "REFUSED" ON Q.Y7, ASK:

Y9. Did you give this answer because industry should pay the costs?

25549

27

11% 1 Yes
89 2 No
(10) 3 DON'T KNOW → SKIP TO Q.Y11
(1) 4 REFUSED

IF "YES" ON Q.Y9, ASK:

Y10. It is very important to us to learn what value you (your household) and other citizens place on the water quality goals-because asking you directly for this Information is one of the best ways to measure the benefits of achieving these goals. Would you be willing to answer these questions if I noted here your view that industry should pay its share?

25410

0% 1 Yes → GO BACK TO Q.24
100 2 No
(2) 3 DON'T KNOW → SKIP TO Q.37, PAGE 18
4 REFUSED

IF "NO", "DON'T KNOW", "REFUSED", ON Q.Y9, ASK:

Y11. Is there a reason why you gave this answer (ANSWER TO Q.24 ANO 4.25) other than the ones I just read to you?

25411

25

80% 1 Yes
20 2 No
(9) 3 DON'T KNOW → SKIP TO Q.37, PAGE i
(1) 4 REFUSED

IF "YES" ON Q.Y11, ASK:

Y12. What is this reason?

SKIP TO 4.37, PAGE 18

IF "YES" TO Q.25, ASK:

26. In addition to (READ AMOUNT IN 4.24). what is the most you (your household) would be willing to pay each year to achieve goal B?

WTPFI

ENTER DOLLAR AMOUNT HERE, ON FLAP AND ON WORKSHEET
000 ZERO OR "NOTHING"
998 DON'T KNOW
999 REFUSED

27. Lastly, would it be worth anything more to (you/your household) to achieve goal A, where 99 percent or more of the nation's freshwater bodies are clean enough to be swimmable?

Q27

560

75% 1 Yes
25 2 No
(7) 3 DON'T KNOW → ASK Q.29
(2) 4 REFUSED

IF "YES" TO Q.27, ASK:

28. In addition to (READ TOTAL AMOUNT FOR Q's 24 AND 26), what is the most you (your household) would be willing to pay each year to achieve goal A?

WTPSI

ENTER DOLLAR AMOUNT HERE, ON FLAP AND ON WORKSHEET
000 ZERO OR "NOTHING"
998 DON'T KNOW
999 REFUSED

INTERVIEWER: IF RESPONDENT VOLUNTEERS AT ANY POINT UP TO NOW MAT HE/SHE WANT TO CHANGE THEIR ANSWER PLEASE GO BACK AND DO SO. JUST MAKE SURE THE ANSWERS ARE CHANGED ON THE QUESTIONNAIRE, THE FLAP AND THE WORKSHEET.

29. ADD UP THE AMOUNTS THE RESPONDENT GAVE FOR 4.24, 26 AND 28 AND ENTER THE AMOUNT ON FLAP AND ON WORKSHEET.

At this point in the interview, I want to review what you have just said and give you the chance to make adjustments and changes. We often find when we ask questions like these that people don't realize that we are going to ask them about three different goals until after we have asked all the questions. Looking at the worksheet, you said you were willing to pay $ for goal C, more for goal B and $ more for goal A. This gives $ total dollars as the maximum annual amount (you/your household) would be willing to pay to reach the nation's water qualfty goals. If you would like to make any changes, please don't hesitate to do so. We want to get your best judgment about how much each of these goals is worth to your household. There are no right or wrong answers. Would you 1 fke to shift any amounts around or raise or lower the total amount?

KHWTP

555

14% 1 Yes, make changes → HELP RESPONDENT CHANGE AMOUNTS ON QUESTIONNAIRE AND ON WORKSHEET INCLUDING TOTAL. RECORD NEW AMOUNTS ON FLAP UNDER COLUMN HEADED Q.29.
86 2 No
(12) 3 DON'T KNOW
(2) 4 REFUSED

244 not asked